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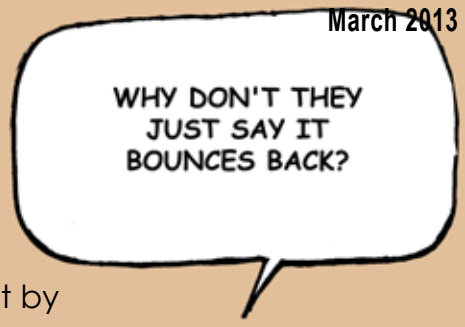
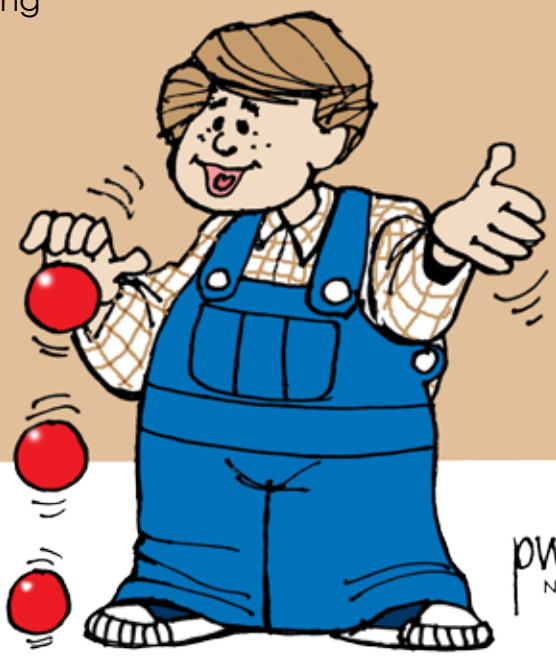
Clarifying resilience



An invited comment by Hugh Deeming



So, we all know what resilience is, don't we? The National Academies recently said building disaster resilience capacity in our communities should be a national imperative (National Academies 2012).So resilience must be a tangible thing, right?

A review of the literature reveals that resilience is a concept that has been applied, variously, to the ability of materials to withstand severe conditions, social-ecological systems, individual psychology, organizations and institutions, critical infrastructure, communities—and so on.

In his 2006 paper on the subject, Manyena (2006) discussed this multidisciplinary adoption of the term. He suggested that without a unifying definition, accurate, useful mapping of its attributes and a simplification of the conceptual target—is the focus on social structures or physical structures?—"Resilience is currently too vague a concept to be useful in informing the disaster risk reduction agenda."

However McAslan (2010), after a similar review, concluded that although the details varied, the many definitions contained a number of useful common characteristics. These include:

- The ability to absorb and then recover from an abnormal event.
- Readiness for facing threats and events which are abnormal in terms of their scale, form, or timing.
- An ability and willingness to adapt to a changing and sometimes threatening environment.
- A tenacity and commitment to survive.
- A willingness of communities and organizations to rally round a common cause and a shared set of values.

Common characteristics

So what is it about these common characteristics that make resilience an aspirational goal? Well, the use of the concept has certainly increased, and not only in the United States. Although there is no literal translation for the word resilience in many languages, in the United Kingdom the "resilience agenda" has become the foundation on which civil protection doctrine is now built.

Rob Hopkins, founder of the Transition Towns movement has even said, "Resilience is a more useful concept than the idea of sustainability." He says that's because resilience is all about "building surge breakers into how we organize the basic things that support us." Sustainability, he says, is more focused in the energy efficiency of our fridges. The definitions used are all slightly different from that used in the National Academies report, but there are hundreds of those definitions.

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Resilience ...

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With the common characteristics at least we know they mean the same basic thing. Don't we?

The National Academies say, "Resilience is the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events." This definition appears to agree in principle if not to the letter to that used by many other institutions around the world. I'd suggest that it's better than many. Importantly, this description communicates an integration that is absent from early "engineering" interpretations, which described a property's simple physical elasticity, i.e., its ability to bounce back into shape after severe loading.

Thinking in terms of the familiar disaster risk reduction cycle of mitigation, preparation, response, and recovery, the "resilience imperative" apparently imbued in this definition clearly relates to every stage of the cycle. Resilience becomes an encompassing capacity and capabilities issue. In effect, in order to be resilient there must be an element of anticipation. You should be able to see the threat you face, then plan and prepare. You must be able to "take your hits."

Because there will always be a wave that's higher than the levee, you must minimize damage potential as best you can. And you must be able—to use resilience parlance—to recover to an "acceptable level of functioning," which is a highly subjective condition.

Intuitively, these first components do reflect the old "bounce back" perspective, that comfortable, "You didn't get us this time!" interpretation. One critique leveled against the linearity of this approach lies in Wildavsky's (1988) differentiation between resilience and anticipation. He argued that unexpected trouble, rather than being knowable in a predictive sense, is actually ubiquitous and unpredictable.

This is not to say that floods do not happen on floodplains. But it points out that anticipation-based strategies—especially those based on limited and inevitably contingent data—are always likely to be confounded by surprises. One example that illustrates this point with clarity is the UK Government's biennial publication, The National Risk Register. The NRR, which first appeared in 2008, defines the risk levels associated with the principal hazards and threats faced by the UK. It provides the background context that underpins UK civil protection resourcing.

What makes the NRR interesting from this anticipation perspective is that volcanic hazards did not appear in its pages until its 3rd edition in 2012—after the 2010 Eyjaflallajökull eruption in Iceland brought European air traffic to a standstill for several days. In terms of national resilience this episode is doubly educational, because while the eruption's impacts weren't anticipated by the risk experts who had formulated the earlier drafts of the NRR, the knowledge that such risks should have been anticipated was available. It's just that it wasn't sought or that the risk assumptions were calculated too conservatively. Each interpretation bears a lesson regarding who decides what needs to be anticipated and planned for.

Ubiquitous and unpredictable?

So if trouble is "ubiquitous and unpredictable," does the final clause of the Academies definition help? Yes it does, because what the final clause reflects is something quite different from the linear disaster risk reduction cycle components. It articulates something that resonates with basic tenets of evolutionary thinking.

The introduction of the concept of adaptation transforms resilience into a dynamic process, rather than as a station to be arrived at. It becomes a process that involves the capacity to "successfully adapt to adverse events." In effect, to be resilient, we must second-guess our threats and we need to implement the lessons of our mistakes.

It has been proposed elsewhere that as a basic human instinct, resilience is second only to survival. This perspective is useful, because adopting it allows the easier understanding that the human capacity for adaptation in the face of threats has been a fundamental factor in our survival as a species. This is because one particularly crucial aspect of our ancestors' lives illustrates that they were resilient—and lucky. This is the fact that every single one of them attained reproductive age in the face of genuinely terrifying threats—I'm thinking of sabertooth tigers, bubonic plague, glaciations, and war. So, it could be suggested that there is something in us all that means that we too are resilient. We haven't just bounced back, we've kept moving forward … like we're climbing Escher's infinite staircase.

So if we're all resilient already, what's the problem? Well, one of the problems is that today, in many places in the world and for many individuals and communities wanting to plan, to absorb, or to adapt to challenges they are facing, the barriers confronting them are large or deep rooted. Every effort to shift them is thwarted. Resilience is a property that is not simply associated with positive outcomes.

Ben Wisner (2004), coauthor of the influential *At Risk*, recently suggested recently during a discussion on the Jiscmail Disaster_Resilience listserv, that resilience thinking requires us to consider an interesting dichotomy regarding "resilience to be sought" and "resilience to be fought." Wisner's point is that an aptitude for adaptation, adjustment, and recovery from stressor influences is not something that is purely confined to positive phenomena. Poverty appears, for example, to be highly resilient, as do despotic regimes. This raises an important warning flag for those who have moved so readily into the resilience camp. This dichotomy, between the "to be sought" aspirational resilience, which allows people to take informed and effective actions to mitigate threats, may not be easy to implement in the face of "to be fought" resilience, with its propensity toward persistence and its resistance to relinquishing dominion, or its own vested interests.

Dynamic pressures, dangerous conditions

Some authors point out that this new focus on resilience is inevitably limited, because it devalues or sidelines the decades of work that has identified the importance that vulnerability reduction plays in reducing socially inequitable disaster effects. Lewis and Kelman (2010), echo Wisner's *At Risk* work, by pointing out that the root causes, dynamic pressures, and dangerous conditions which preconfigure vulnerability over time and space must be taken into consideration in any resilience building initiative.

Vulnerable people living in unsafe buildings in hazardous locations will only ever possess finite amounts of resilience, meaning that "at best, resilience is fragile amelioration for those suffering from long-term permanent vulnerabilities perpetuated for the advantage and profit of others." Such arguments reveal the importance of acknowledging that an understanding of the key drivers of differential vulnerability

(i.e., susceptibility to harm) provides a critical backdrop for our developing understanding of how resilience operates. However, they also illustrate why resilience needs to be considered as a social justice issue, too.

As part of the Community and Regional Resilience (CARRI) project, Betty Hearn Morrow wrote a report on the social-justice issues surrounding resilience. She pointed out, "Resilience requires: (1) knowledge of the hazard; (2) accurate perception of the risk; (3) understanding of available alternatives; and (4) the resources and flexibility to respond successfully."

We can agree to this typology because it fits closely to our own working definition. However, Morrow goes on to point out that these factors are not spread equally through societies. Their distribution is largely determined by social and economic forces, many of which are outside the control of much of the population. This coupling of unequal exposure to risk with an unequal exposure to resources is, she says, what preconfigures social vulnerability. Social vulnerability has been identified as a principal reason poor households are often situated in high-risk locations, why they live in sub-standard accommodation, and why they are more likely to be tenants than owner-occupiers. All these factors are known to increase disaster risk.

However, social justice issues are not just related to poverty. Differential vulnerabilities can also result from socially ingrained negative attitudes toward gender, age, disability, minority status, and social disconnection or exclusion, with these factors rarely occurring in isolation. Buckle (2003) et al. point out that for vulnerable people, anxiety about feeding the children and paying the rent on time constitute the "overheads" of daily life. Expecting them to seek information about and take substantive action to mitigate what are low probability threats, is unrealistic. Buckle et al. clarify that this is not to say that vulnerable people do not appreciate the consequences for themselves if a disaster were to occur, it's just that they can't afford to expend resources considering them. To adopt Weber's (2006) phrase, people only have a finite pool of worry with which to get through their day.

Therapeutic communities

This raises an important point about how resilience framing influences our perceptions about the way in which vulnerable people cope with extreme events. The shocking images of post-tsunami Aceh, or post-Katrina New Orleans notwithstanding, many media portrayals of hazard aftermaths show resilient communities in action. Daring rescues of neighbors by neighbors are breathlessly reported. Television shows evacuation centers, staffed by volunteers, full of exhausted but philosophical survivors.

These images provide evidence of altruism. When circumstances get extreme, people often go out of their way to help each other. Both Allen Barton and Charles Fritz wrote of these therapeutic community effects many years ago and every year the compendium of stories expands. This is good. It is a substantiation of true social resilience.

However, because disaster effects must be endured long after the camera crews have packed up and gone, it is vital

that this therapeutic effect is understood as providing an important but insufficient indicator of encompassing community resilience. To explain, in research after serious flooding in the northeast England city of Hull in 2007, monitored the recovery of a core group of flood affected citizens for 18 months. Each group member kept a diary throughout this period, in which they recorded their day-to-day experiences. They also completed a weekly diary task, in which they rated their quality of life, relationships with family and friends, and health. What emerged from the research was striking if not truly surprising. What the diarists reported was that while the day of the flood had represented a traumatic experience, it was what came after that caused them equal or greater distress and which tested their resilience to the full.

In his ground-breaking work on psychological resilience, Bonanno (2002) discovered that spousal bereavement resulted in the extended dysfunction of only one-quarter of his subjects. All other subjects felt great sadness, but were able to adapt and even grow from the loss over time. Bonanno labelled as resilient the most effectively adapting group, who reported no debilitating grief at all. This group comprised 45.9 percent of the sample, almost half. Although the experiment was not disaster-related in the natural hazards sense, what this research confirms is the innate human aspect of resilience that allows most individuals to keep going even after a single momentous loss.

In Hull the problem was that the diarists kept being hit. Not by flood waves, but by the waves of bureaucracy and mismanagement and poor workmanship that flowed from insurers and builders and other organizations with whom they were forced to engage. The diarists recovered. They all eventually moved back into their homes. But doing so required a roller-coaster ride of intense emotional work. Ups and downs for months, to the extent that the experience was referred to as like playing Snakes and Ladders.

Their experiences illustrate the skills learned, as well as

the persistence and the sheer determination that saw the diarists navigate and negotiate their way through this process. The diaries effectively refute any perception that the path back to the new normality after a hazard impact can ever be visualized as a uniformly rising stroke drawn on an x-y plot. Yes, it takes resilience to prepare and to respond, but it also takes resilience to recover and even then, the knowledge that vulnerabilities may still exist subtly and irredeemably changes perceptions of home forever. The Hull study is not alone in identifying this issue. It is just one of many stories of personal disasters inflicted by a hazard but then perpetuated by very human actions or inactions. These cases have lessons to teach all resilience advocates.

It is looking increasingly clear that in the coming decades the challenges our communities and our descendants, are going to face may come quicker, harder, more often, and from different directions, from those that have educated and tempered us. To confront this gathering storm the imperative, we are told, is to build our resilience. This is good advice, it is constructive, it provides legitimacy to those seeking to think innovatively and to those wanting to build 'surge protectors' into our systems of protection and sustenance.

We must not forget that the personal capabilities, capacities, and resources needed to prepare and plan for, absorb, recover from, and more successfully adapt to any threat or challenge will, for some, be wickedly constrained by factors beyond their control. What we must understand that the imperative is to nurture types of resilience that go beyond ideas that busy soup kitchens and conviviality are sufficient indicators of success. The resilience we seek necessitates that we challenge the institutions that create vulnerabilities and perpetuate risks and it demands that the strategies we adopt are socially inclusive and socially just. We all have an inherited instinct for resilience, but that does not mean that safety nets aren't sometimes required.

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Rethinking hurricane risk communication

An invited comment by Tim. L. Tinker and Winnie Chao

Large-scale weather events in the United States, like hurricanes Isaac and Katrina, represent a unique class of risk situations that challenge traditional approaches to risk and crisis communications. Public communications messaging is often chaotic as the storm's narrative emerges and unfolds in the days, hours, and even minutes before landfall. For example, during Hurricane Isaac, CNN was forecasting potential financial losses if the Gulf Coast's oil refinery industry were to feel the full brunt of the storm.

Before Katrina became a full-fledged hurricane, Lieutenant General Russel Honoré was urging President George W. Bush to declare a state of emergency in Louisiana so that the public would take the threat seriously. While the President urged Gulf Coast residents to follow the instructions of local officials, then-U.S. Rep. Bobby Jindal was blaming the federal government for failing to declare a state of emergency.

As these examples illustrate, public communications messaging leading up to and during a hurricane is often disjointed and disordered, resulting in a failure to effectively reach intended audiences.

For public officials and commercial entities alike, delivering messages about risk, be it hurricanes, earthquakes, or other natural disasters, may appear to be straightforward—decide what they want to say, who they want to say it to, and then say it. The message that the public receives is not just a matter of language. Its meaning and impact is affected by the circumstances in which the message is delivered, including who delivers it (source) and how it is delivered (channel).

Moreover, communication can operate at different levels at the same time. The ostensible message may be clear and simple, but it may be interpreted differently depending upon the values, attitudes, and belief systems of the recipients and their relationship to the source.